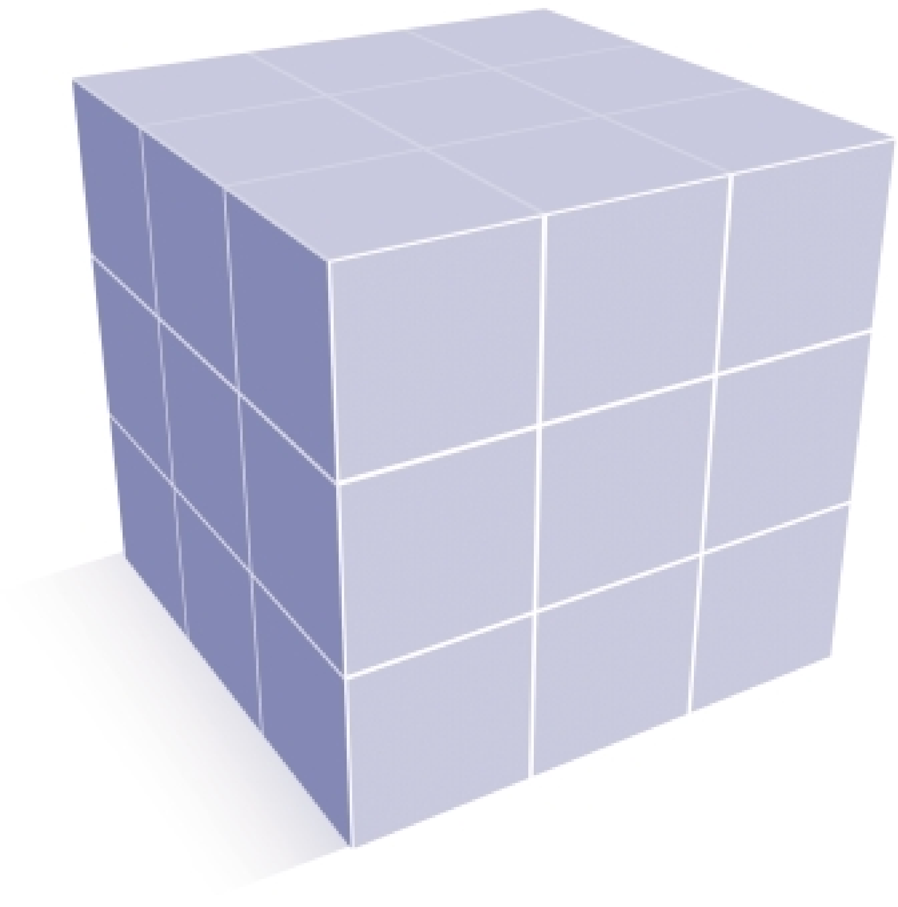
HOLTEK

Selection Guide



盛群半導體股份有限公司
HOLTEK SEMICONDUCTOR INC.

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Contents

8-Bit MCU

Cost-Effective I/O Type MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	8-bit Timer	Interrupt		PFD	Stack	Package
							Ext.	Int.			
HT48R05A-1 HT48C05	2.2V~5.5V	400kHz~8MHz	0.5K×14	32×8	13	1	1	1	√	2	16SSOP, 18DIP/SOP
HT48R06A-1 HT48C06	2.2V~5.5V	400kHz~8MHz	1K×14	64×8	13	1	1	1	√	2	16SSOP, 18DIP/SOP

Note: Part numbers including ″C″ are mask version devices while ″R″ are OTP devices.

I/O Type MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer			Interrupt		PFD	Stack	Package
						8-bit	16-bit	RTC	Ext.	Int.			
HT48R10A-1 HT48C10-1	2.2V~5.5V	400kHz~8MHz	1K×14	64×8	21	1	—	√	1	1	√	4	24SKDIP/SOP
HT48R30A-1 HT48C30-1	2.2V~5.5V	400kHz~8MHz	2K×14	96×8	25	1	—	√	1	1	√	4	24SKDIP/SOP, 28SKDIP/SOP
HT48R50A-1 HT48C50-1	2.2V~5.5V	400kHz~8MHz	4K×15	160×8	35	1	1	√	1	2	√	6	28SKDIP/SOP, 48SSOP
HT48R70A-1 HT48C70-1	2.2V~5.5V	400kHz~8MHz	8K×16	224×8	56	—	2	√	1	2	√	16	48SSOP, 64QFP

Note: 1. Part numbers including ″C″ are mask version devices while ″R″ are OTP devices.
2. RTC is available when internal RC oscillator is selected as system clock.

LCD Type MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer			Interrupt		PFD	Stack	Package
							8-bit	16-bit	RTC	Ext.	Int.			
HT49R30A-1 HT49C30-1	2.2V~5.5V	400kHz~8MHz or 32768Hz	2K×14	96×8	14	18×4 or 19x3	1	—	√	2	3	√	4	48SSOP
HT49C30L	1.2V~2.2V	400kHz~500kHz or 32768Hz												
HT49R50A-1 HT49C50-1	2.2V~5.5V	400kHz~8MHz or 32768Hz	4K×15	160×8	20	32×4 or 33×3	2	—	√	2	4	√	6	48SSOP, 100QFP
HT49C50L	1.2V~2.2V	400kHz~500kHz or 32768Hz												
HT49R70A-1 HT49C70-1	2.2V~5.5V	400kHz~8MHz or 32768Hz	8K×16	224×8	24	40×4 or 41×3	1	1	√	2	4	√	16	100QFP
HT49C70L	1.2V~2.2V	400kHz~500kHz or 32768Hz												

Note: 1. Part numbers including ″C″ are mask version devices, ″R″ are OTP devices, while part numbers suffixed with ″L″ are low voltage mask version devices.
2. For the low voltage mask version devices, note that the HT49R30A-1, HT49R50A-1 and HT49R70A-1 devices can be used as corresponding OTP devices.

A/D Type MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		I²C	A/D	PWM	PFD	Stack	Package
						8-bit	16-bit	Ext.	Int.						
HT46R47 HT46C47	2.2V~5.5V	400kHz~8MHz	2K×14	64×8	13	1	—	1	2	—	9-bit×4ch	8-bit×1	√	6	18DIP/SOP
HT46R22 HT46C22	2.2V~5.5V	400kHz~8MHz	2K×14	64×8	19	1	—	1	3	√	9-bit×8ch	8-bit×1	√	6	24SKDIP/SOP
HT46R23 HT46C23	2.2V~5.5V	400kHz~8MHz	4K×15	192×8	23	—	1	1	3	√	10-bit×8ch	8-bit×2	√	8	24SKDIP/SOP, 28SKDIP/SOP
HT46R24 HT46C24	2.2V~5.5V	400kHz~8MHz	8K×16	384×8	40	—	2	1	4	√	10-bit×8ch	8-bit×4	√	16	28SKDIP/SOP, 48SSOP

Note: Part numbers including ″C″ are mask version devices while ″R″ are OTP devices.

8-Bit MCU

A/D with LCD Type MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer			Interrupt		A/D	PWM	PFD	Stack	Package
							8-bit	16-bit	RTC	Ext.	Int.					
HT46R62 HT46C62*	2.2V~ 5.5V	400kHz~8MHz or 32768Hz	2K×14	88×8	20	19×4 or 20×3	1	—	√	2	4	9-bit×6ch	8-bit×3	√	6	56SSOP
HT46R63 HT46C63	2.2V~ 5.5V	400kHz~8MHz	4K×15	208×8	32	19×4 or 20×3	—	1	√	2	4	8-bit×8ch	8-bit×4	—	8	56SSOP, 100QFP
HT46R64 HT46C64*	2.2V~ 5.5V	400kHz~8MHz or 32768Hz	4K×15	192×8	24	32×4 or 33×3	1	1	√	2	5	10-bit×8ch	8-bit×4	√	8	56SSOP, 100QFP
HT46R65 HT46C65*	2.2V~ 5.5V	400kHz~8MHz or 32768Hz	8K×16	384×8	24	40×4 or 41×3	—	2	√	2	5	10-bit×8ch	8-bit×4	√	16	56SSOP, 100QFP

* Under development, available in 1Q, 2004.

Note: Part numbers including "C" are mask version devices while "R" are OTP devices.

R-F Type MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	LCD	Timer		Interrupt		R-F	IR Carrier	PFD	Stack	Package
							16-bit	RTC	Ext.	Int.					
HT47C10L	1.2V~2.2V	32kHz	1K×16	32×8	8	9×4	1	—	—	2	1ch	—	—	2	44QFP
HT47R20A-1 HT47C20-1	2.2V~5.5V	400kHz~8MHz	2K×16	64×8	12	19×4 or 20×3	1	√	1	3	2ch	√	√	4	64QFP
HT47C20L	1.2V~2.2V	32768Hz										—			

Note: 1. Part numbers including "C" are mask version devices, "R" are OTP devices, while part numbers suffixed with "L" are low voltage mask version devices.
2. For the low voltage mask version devices, note that the HT47R20A-1 device can be used as corresponding OTP devices.

Remote Type MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		IR Carrier	PFD	Stack	Package
						8-bit	16-bit	Ext.	Int.				
HT48RA0A HT48CA0	2.2V~3.6V	400kHz~4MHz	1K×14	32×8	16	—	—	—	—	√	—	1	20/24SOP
HT48CA6	1.8V~3.6V	400kHz~4MHz	1K×14	32×8	16	—	—	—	—	√	—	1	20/24SOP
HT48RA3 HT48CA3	2.2V~3.6V	400kHz~4MHz	24K×16	224×8	23	1	1	1	2	—	√	8	28SKDIP/SOP

Note: 1. Part numbers including "C" are mask version devices while "R" are OTP devices.
2. For HT48CA6, OTP MCUs (HT48RA0A) are available for product development and verification purposes.

Phone Controller MCU Series

Part No.	VDD	Program Memory	Data Memory	General I/O	Dialer I/O	LCD	Timer	External Interrupt	Stack	DTMF Generator	FSK Receiver	Package
HT95A100 HT95A10P	2.4V~5.5V	4K×16	384×8	20	6	—	16-bit×2	3	4	√	—	28SOP
HT95A200 HT95A20P	2.4V~5.5V	4K×16	1152×8	28	8	—	16-bit×2	4	8	√	—	48SSOP
HT95A300 HT95A30P	2.4V~5.5V	8K×16	2112×8	28	8	—	16-bit×2	4	8	√	—	48SSOP
HT95A400* HT95A40P*	2.4V~5.5V	16K×16	2880×8	44	8	—	16-bit×2	4	12	√	—	64QFP
HT95L000 HT95L00P	2.4V~5.5V	4K×16	384×8	14~18	6	12×8~16×8	16-bit×2	3	4	√	—	56SSOP
HT95L100 HT95L10P	2.4V~5.5V	4K×16	1152×8	16~20	8	16×8~20×8	16-bit×2	4	8	√	—	64QFP
HT95L200 HT95L20P	2.4V~5.5V	8K×16	1152×8	20~28	8	24×8~24×16	16-bit×2	4	8	√	—	100QFP
HT95L300 HT95L30P	2.4V~5.5V	8K×16	2112×8	16~28	8	36×16~48×16	16-bit×2	4	8	√	—	100QFP
HT95L400* HT95L40P*	2.4V~5.5V	16K×16	2880×8	28~40	8	36×16~48×16	16-bit×2	4	12	√	—	128QFP
HT95C200 HT95C20P	2.4V~5.5V	8K×16	1152×8	20~28	8	24×8~24×16	16-bit×2	4	8	√	√	128QFP
HT95C300 HT95C30P	2.4V~5.5V	8K×16	2112×8	16~28	8	36×16~48×16	16-bit×2	4	8	√	√	128QFP
HT95C400* HT95C40P*	2.4V~5.5V	16K×16	2880×8	28~40	8	36×16~48×16	16-bit×2	4	12	√	√	128QFP

* Under development, available in 1Q, 2004.

Note: 1. Part numbers including "A" are I/O type devices, "L" are LCD type devices, while "C" are LCD with CID type devices.
2. Part numbers suffixed with "P" are OTP devices, all others are mask version devices.

8-Bit MCU

Dot Matrix LCD MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	Data ROM	I/O	LCD	Timer			Interrupt		D/A	Stack	Package
								8-bit	16-bit	RTC	Ext.	Int.			
HTG2130	2.4V~3.6V	400kHz~4MHz	8K×16	192×8	—	8~12	16×8~ 20×8	—	1	√	1	3	PWM	8	100QFP
HTG2150	2.4V~3.6V	400kHz~4MHz	16K×16	192×8	—	8~12	33×8~ 40×8	2	1	√	1	4	PWM	8	100QFP
HTG2160	2.4V~3.6V	400kHz~4MHz	32K×16	384×8	—	15	40×16	2	2	√	1	6	DAC, PWM	8	100QFP
HTG2190	2.4V~3.6V	400kHz~4MHz	64K×16	2.3K×8	—	15~39	40×16~ 64×16	2	2	√	1	6	DAC, PWM	8	128QFP
HTG21A0	2.4V~3.6V	400kHz~4MHz	64K×16	2.3K×8	384K×8	16~40	80×16~ 64×32	2	2	√	1	6	DAC, PWM	8	160QFP

Note: 1. All listed devices are mask version MCUs.
2. OTP version MCUs are available for product development and verification purposes.

Data Bank MCU Series

Part No.	VDD	Program Memory	Data Memory	I/O Max.	LCD Max.	Package
HT23B20* HT23B20R*	2.4V~3.6V	8K×16	512×8	26	32×8	64QFP
HT23B20L*	1.2V~2.2V					
HT23B40* HT23B40R*	2.4V~3.6V	16K×16	1K×8	28	40×8	100QFP
HT23B40L*	1.2V~2.2V					
HT23B60 HT23B60R*	2.4V~3.6V	32K×16	2.3K×8	30	60×11	100QFP
HT23B60L*	1.2V~2.2V					

* Under development, available in 1Q, 2004.

Note: 1. Part numbers suffixed with "0" are mask version devices, "R" are OTP devices, while part numbers suffixed with "L" are low voltage mask version devices.
2. For the low voltage mask version devices, note that the HT23B20R, HT23B40R and HT23B60R devices can be used as corresponding OTP devices.

Voice MCU Series

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer		D/A	Stack	Package
							16-bit	RTC			
HT86072	2.4V~5.2V	8K×16	208×8	192K×8	72sec	23	3	√	12-bit×1ch	8	28SOP, 100QFP
HT86144	2.4V~5.2V	8K×16	208×8	384K×8	144sec	23	3	√	12-bit×1ch	8	28SOP, 100QFP
HT86192	2.4V~5.2V	8K×16	208×8	512K×8	192sec	23	3	√	12-bit×1ch	8	28SOP, 100QFP
HT86384	2.4V~5.2V	8K×16	208×8	1024K×8	384sec	23	3	√	12-bit×1ch	8	28SOP, 100QFP
HT86576	2.4V~5.2V	8K×16	208×8	1536K×8	576sec	23	3	√	12-bit×1ch	8	32SOP, 100QFP
HT86768	2.4V~5.2V	8K×16	208×8	2048K×8	768sec	23	3	√	12-bit×1ch	8	32SOP, 100QFP

Note: 1. All listed devices are mask version MCUs.
2. Evaluation kits are available for product development and verification purposes, please contact us for further information.

Music MCU Series

Part No.	VDD	Program Memory	Data Memory	I/O	Timer	Polyphony	D/A	Package
HT36A4	2.4V~5.0V	32K×16	208×8	8	8-bit×2	8	16-bit×1	16DIP, 20SOP
HT36A3	2.4V~5.0V	32K×16	208×8	20	8-bit×2	8	16-bit×1	28SOP, 48SSOP
HT36A2	2.4V~5.0V	64K×16	208×8	20	8-bit×2	8	16-bit×1	28SOP, 48SSOP
HT36A1*	2.4V~5.0V	64K×16	208×8	24	8-bit×2	8	16-bit×2	48SSOP
HT36A0	3.6V~5.0V	64K×16	208×8	28	16-bit×2	16	16-bit×2	48SSOP
HT36B2	3.6V~5.0V	128K×16	512×8	32	16-bit×2	16	16-bit×2	28SOP, 56SSOP
HT36B0	3.6V~5.0V	256K×16	768×8	36	16-bit×2	16	16-bit×2	28SOP, 64QFP

* Under development, available in 1Q, 2004.

Note: The waveform data and program code share the same memory space.

8-Bit MCU

Keyboard/Mouse/Joystick MCU Series

Part No.	VDD	Clock Mode	Program Memory	Data Memory	Interface	I/O	Timer		A/D	PWM	Stack	Package
							8-bit	16-bit				
HT82K68E HT82K68A	2.2V~5.5V	RC/Crystal	3K×16	160×8	PS/2	37	1	—	—	—	6	20/28SOP, 48SSOP
HT82K96E HT82K96A	4.4V~5.5V	Crystal	4K×15	160×8	USB+PS/2	32	1	1	8-bit×6ch	—	8	20SOP, 48SSOP
HT82J97E HT82J97A*	4.0V~5.5V	Crystal	2K×14	96×8	USB+PS/2	20	—	1	8-bit×6ch	8-bit×2	4	20/28SOP
HT82M99E HT82M99A*	4.0V~5.5V	Crystal	2K×14	96×8	USB+PS/2	12	—	1	—	—	4	18/20DIP, 20SOP

* Under development, available in 1Q, 2004.

Note: Part numbers suffixed with "A" are mask version devices while "E" are OTP devices.

Display Driver

RAM Mapping LCD Controller & Driver Series

Part No.	Common	Segment	VDD	LCD Voltage	Duty	Bias	Serial Data	Built-in OSC.	Ext. Crystal	Package
HT1620	4	32	2.4V~3.3V	3/2VDD	1/2, 1/3, 1/4	1/2, 1/3	1	—	√	64QFP
HT1621	4	32	2.4V~5.2V	3V~VDD	1/2, 1/3, 1/4	1/2, 1/3	1	√	√	28SKDIP 48SSOP/DIP
HT1622	8	32	2.7V~5.2V	3V~VDD	1/8	1/4	1	√	—	64QFP
HT16220	8	32	2.7V~5.2V	3V~VDD	1/8	1/4	1	—	√	64QFP
HT1623	8	48	2.7V~5.2V	3V~VDD	1/8	1/4	1	√	√	100QFP
HT1625	8	64	2.7V~5.2V	3V~VDD	1/8	1/4	1	√	√	100QFP
HT1626	16	48	2.7V~5.2V	3V~VDD	1/16	1/5	1	√	√	100QFP
HT1647	16	64	2.7V~5.2V	3V~VDD	1/16	1/4, 1/5	4	√	√	100QFP
HT1650	32	64	2.7V~5.2V	3V~VDD	1/16, 1/32	1/5, 1/6	4	√	√	128QFP
HT1660	32	96	2.7V~5.2V	3V~VDD	1/16, 1/32	1/5, 1/6	4	√	√	160QFP
HT1670	32	128	2.7V~5.2V	3V~VDD	1/16, 1/32	1/5, 1/6	4	√	√	208QFP

Telephony LCD Driver Series

Part No.	Digit	VDD	LCD Voltage	Duty	Bias	RTC Display
HT1611C	8, 10	1.2V~1.7V	3V	1/3	1/2	√
HT1613C	8, 10	1.2V~1.7V	3V	1/3	1/2	√
HT1616C	12, 16	1.2V~1.7V	3V	1/3	1/2	√

Note: For the HT1613C, the RTC Display function can be deselected by a pad bonding option.

VFD Controller & Driver Series

Part No.	Segment	Digit	VDD	Output Voltage	Key Matrix	General Input	LED Output	Dimming Step	Package
HT16511	12~20	16~8	5V	VDD–35V	12×4	4	5	8	52QFP
HT16512	11~16	11~4	5V	VDD–35V	6×4	4	4	8	44QFP
HT16515	16~24	12~4	5V	VDD–35V	16×2	—	4	8	44QFP

Dot Character VFD Controller & Driver

Part No.	Segment	Digit	VDD	Output Voltage	Key Matrix	Display RAM	CGROM	CGRAM	Package
HT16514*	80	24	5V	80V	12×4	80×8 bits	248×5×8 bits	8×5×8 bits	144LQFP

* Under development, available in 1Q, 2004.

OLED Driver Series

Part No.	VDD	Display Size (SEG×COM)	Description	Status	Package
HT16A102*	2.7V~3.6V	96×64	16 gray scale	Sample Stage	Gold Bump/COF
HT16A103*	2.7V~3.6V	96×48	4 gray scale + 10 hard icon	Sample Stage	Gold Bump/COF

* Under development, available in 2Q, 2004.

Memory

Mask ROM Series

Part No.	Capacity	VDD	Access Time @5V (ns)	Operating Current @5V (mA)	Standby Current @5V (μA)	Package
HT23C128	16K×8	2.7V~5.5V	150	25	30	28DIP/SOP
HT23C256	32K×8	2.7V~5.5V	150	25	30	28DIP/SOP
HT23C512	64K×8	2.7V~5.5V	150	25	30	28DIP/SOP
HT23C010	128K×8	2.7V~5.5V	150	25	30	28DIP/SOP, 32DIP/SOP/PLCC
HT23C020	256K×8	2.7V~5.5V	150	25	30	32DIP/SOP/PLCC
HT23C040 HT23C040H	512K×8	2.7V~5.5V	120	25	30	32DIP/SOP/PLCC
			90		60	32DIP/SOP
HT23C4096H	256K×16	2.7V~5.5V	90	25	60	40DIP, 44PLCC

OTP EPROM Series

Part No.	Capacity	VDD	Programming Voltage	Access Time (ns)	Operating Current (mA)	Standby Current (μA)	Package
HT27C512 HT27LC512	64K×8	5.0V±10%	12.2V±0.2V	70	30	1	28DIP/SOP, 32PLCC
		3.3V±10%		90	15		28DIP/SOP/TSOP, 32PLCC
HT27C010 HT27LC010	128K×8	5.0V±10%	12.5V±0.2V	70	30	1	32DIP/SOP/PLCC
		3.3V±10%		90	15		32DIP/SOP/TSOP/PLCC
HT27C020 HT27LC020	256K×8	5.0V±10%	12.5V±0.2V	70	30	1	32DIP/SOP/PLCC
		3.3V±10%		90	15		32DIP/SOP/TSOP/PLCC
HT27C040 HT27LC040	512K×8	5.0V±10%	12.5V±0.2V	70	30	1	32DIP/SOP/PLCC
		3.3V±10%		90	15		32DIP/SOP/TSOP/PLCC
HT27C4096 HT27LC4096	256K×16	5.0V±10%	12.5V±0.2V	70	30	1	40DIP, 44PLCC
		3.3V±10%		90	15		

SPI OTP EPROM Series

Part No.	Capacity	VDD	Programming Voltage	Access Time (ns)	Operating Current (mA)	Standby Current (μA)	Package
HT25LC512	64K×8	2.7V~3.6V	12.5V±0.2V	36	15	2	8SOP

3-wire EEPROM Series

Part No.	Capacity	VDD	Clock Rate (MHz)	Write Speed @2.4V (ms)	Operating Current @5V (mA)	Standby Current @5V (μA)	Package
HT93LC46	64×16/128×8	2.4V~5.5V	1	2	5	10	8DIP/SOP/TSSOP
HT93LC56	128×16/256×8	2.4V~5.5V	1	5	5	10	8DIP/SOP
HT93LC66	256×16/512×8	2.4V~5.5V	1	5	5	10	8DIP/SOP/TSSOP
HT93LC76*	512×16/1024×8	2.4V~5.5V	1	5	5	10	8DIP/SOP
HT93LC86*	1024×16/2048×8	2.4V~5.5V	1	5	5	10	8DIP/SOP/TSSOP

* Under development, available in 1Q, 2004.

I²C EEPROM Series

Part No.	Capacity	VDD	Clock Rate (kHz)	Write Speed @2.4V (ms)	Operating Current @5V (mA)	Standby Current @5V (μA)	Package
HT24LC02	256×8	2.2V~5.5V	400	5	5	5	8DIP/SOP/TSSOP
HT24LC04	512×8	2.2V~5.5V	400	5	5	5	8DIP/SOP
HT24LC08	1024×8	2.2V~5.5V	400	5	5	5	8DIP/SOP
HT24LC16	2048×8	2.2V~5.5V	400	5	5	5	8DIP/SOP
HT24LC32*	4096×8	2.4V~5.5V	400	5	5	5	8DIP/SOP
HT24LC64*	8192×8	2.4V~5.5V	400	5	5	5	8DIP/SOP
HT24LC128*	16384×8	2.4V~5.5V	400	5	5	5	8DIP/SOP
HT24LC256*	32768×8	2.4V~5.5V	400	5	5	5	8DIP/SOP

* Under development, available in 1Q, 2004.
Note: I²C is a trademark of Philips Semiconductors.

Remote Controller

Remote Type MCU Series

Part No.	VDD	System Clock	Program Memory	Data Memory	I/O	Timer		Interrupt		IR Carrier	Stack	Package
						8-bit	16-bit	Ext.	Int.			
HT48RA0A HT48CA0	2.2V~3.6V	400kHz~4MHz	1K×14	32×8	16	—	—	—	—	1ch	1	20/24SOP
HT48CA6	1.8V~3.6V	400kHz~4MHz	1K×14	32×8	16	—	—	—	—	1ch	1	20/24SOP
HT48RA3 HT48CA3	2.2V~3.6V	400kHz~4MHz	24K×16	224×8	23	1	1	1	2	1ch	8	28SKDIP/SOP

Note: 1. Part numbers including "C" are mask version devices while "R" are OTP devices.
2. For HT48CA6, OTP MCUs (HT48RA0A) are available for product development and verification purposes.

2^{12} Encoder/Decoder Series

Part No.	Encoder/ Decoder	VDD	Addr. No.	Addr./ Data No.	Data Type	Trig.	Check Times	38kHz Carrier	Package	Pair
HT12A	Encoder	2.4V~5V	8	4	—	Data	—	√	18DIP, 20SOP	HT12D/12F
HT12E	Encoder	2.4V~12V	8	4	—	$\overline{TE}$	—	—	18DIP, 20SOP	HT12D/12F
HT12D	Decoder	2.4V~12V	8	4	Latch	—	3	—	18DIP, 20SOP	HT12A/12E
HT12F	Decoder	2.4V~12V	12	0	—	—	3	—	18DIP, 20SOP	HT12A/12E

3^9 Encoder Series

Part No.	Encoder/Decoder	VDD	Addr. No.	Addr./Data No.	Trig.	Package
HT6026	Encoder	4V~18V	0	9	$\overline{TE}$	16DIP/NSOP

3^{12} Encoder/Decoder Series

Part No.	Encoder/ Decoder	VDD	Addr. No.	Addr./ Data No.	Data Type	Trig.	Check Times	Package	Pair
HT6010	Encoder	2.4V~12V	8	4	—	$\overline{TE}$	—	18DIP, 20SOP	HT6030/32/34
HT6012	Encoder	2.4V~12V	10	2	—	Data	—	18DIP, 20SOP	HT6032
HT6014	Encoder	2.4V~12V	8	4	—	Data	—	18DIP, 20SOP	HT6034
HT6030	Decoder	2.4V~12V	12	0	—	—	2	18DIP, 20SOP	HT6010
HT6032	Decoder	2.4V~12V	10	2	Latch	—	2	18DIP, 20SOP	HT6010/12
HT6034	Decoder	2.4V~12V	8	4	Latch	—	2	18DIP, 20SOP	HT6010/14

3^{18} Encoder/Decoder Series

Part No.	Encoder/ Decoder	VDD	Addr. No.	Addr./ Data No.	Data Type	Trig.	Check Times	Package	Pair
HT680	Encoder	2.4V~12V	8	4	—	TE	—	18DIP/SOP	HT692
HT600	Encoder	2.4V~12V	9	5	—	TE	—	20DIP/SOP	HT604L/614
HT6207	Encoder	2.4V~12V	10	4	—	Data	—	20DIP/SOP	HT604L/614
HT604L	Decoder	2.4V~12V	10	4	Latch	—	2	20DIP/SOP	HT600/6207
HT614	Decoder	2.4V~12V	10	4	Momentary	—	2	20DIP/SOP	HT600/6207
HT692	Decoder	2.4V~12V	10	2	Momentary	—	2	18DIP	HT680

Learning Encoder Series

Part No.	VDD	Addr. No.	Addr./Data No.	Trig.	Package
HT6P20A	2V~12V	24	0	—	8DIP/SOP
HT6P20B	2V~12V	22	2	Data	8DIP/SOP
HT6P20D	2V~12V	20	4	Data	16DIP/NSOP

TV Remote Controller Series

Part No.	Encoder/ Decoder	VDD	Addr. No.	Addr./Data No.	Key No.	38kHz Carrier	Package
HT6221	Encoder	1.8V~3.5V	16	8	32	√	20SOP
HT6222	Encoder	1.8V~3.5V	16	8	64	√	24SOP
HT6230	Encoder	2.4V~5.2V	5	6	96	√	28SOP
HT6240-002	Encoder	2.2V~3.6V	8	8	32	√	20/24SOP

Remote Controller

RFID Series

Part No.	Supply Freq.	Modulation	Memory (Data)	Baud Rate @3V (bps)	Check	Encoding	Data Read
HT6720	13.56MHz	ASK	96(64)	4K	CRC-16	PWM	Repeat
HT6740*	13.56MHz	ASK	18	7.5K	Parity-2	PWM	Repeat

* Under development, available in 1Q, 2004.

Doorbell Series

Part No.	Description	VDD	Addr. No.	Check Times	Package	Pair
HT12M	HT12D + Melody + AMP	2.4V~5V	8	3	16DIP	HT12E

Power Management

30mA Regulator Series

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT1015	12V	1.5V	7	2.2	±5%	TO92, SOT89
HT7130-1	24V	3.0V	30	3.0	±3%	TO92, SOT89, SOT25
HT7133-1	24V	3.3V	30	3.0	±3%	TO92, SOT89, SOT25
HT7136-1	24V	3.6V	30	3.0	±3%	TO92, SOT89, SOT25
HT7144-1	24V	4.4V	30	3.0	±3%	TO92, SOT89, SOT25
HT7150-1	24V	5.0V	30	3.0	±3%	TO92, SOT89, SOT25

100mA Regulator Series

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT7530-1	24V	3.0V	100	3.5	±3%	TO92, SOT89, SOT25
HT7533-1	24V	3.3V	100	3.5	±3%	TO92, SOT89, SOT25
HT7536-1	24V	3.6V	100	3.5	±3%	TO92, SOT89, SOT25
HT7544-1	24V	4.4V	100	3.5	±3%	TO92, SOT89, SOT25
HT7550-1	24V	5.0V	150	3.5	±3%	TO92, SOT89, SOT25

300mA Regulator Series

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT7318*	12V	1.8V	300	3	±2%	TO92, SOT89
HT7325*	12V	2.5V	300	3	±2%	TO92, SOT89
HT7327*	12V	2.7V	300	3	±2%	TO92, SOT89
HT7330*	12V	3.0V	300	3	±2%	TO92, SOT89
HT7333*	12V	3.3V	300	3	±2%	TO92, SOT89
HT7335*	12V	3.5V	300	3	±2%	TO92, SOT89
HT7338*	12V	3.8V	300	3	±2%	TO92, SOT89
HT7350*	12V	5.0V	300	3	±2%	TO92, SOT89

* Under development, available in 1Q, 2004.

Negative Voltage Regulator Series

Part No.	Maximum Input Voltage	Output Voltage	Typical Output Current (mA)	Typical Current Consumption (μA)	Tolerance	Package
HT7430	–24V	–3.0V	100	200	±5%	TO92, SOT89

Voltage Detector Series

Part No.	Maximum Input Voltage	Detect Voltage	Hysteresis Width (V)	Typical Current Consumption (μA)	Tolerance	Package
HT7022A	12V	2.2V	0.11	1.8	±5%	TO92, SOT89
HT7024A-1	24V	2.4V	0.12	4	±3%	TO92, SOT89, SOT25
HT7027A-1	24V	2.7V	0.135	4	±3%	TO92, SOT89, SOT25
HT7033A-1	24V	3.3V	0.165	4	±3%	TO92, SOT89, SOT25
HT7039A-1	24V	3.9V	0.195	4	±3%	TO92, SOT89, SOT25
HT7044A-1	24V	4.4V	0.22	4	±3%	TO92, SOT89, SOT25
HT7050A-1	24V	5.0V	0.25	4	±3%	TO92, SOT89, SOT25

100mA Step-up DC/DC Converter Series

Part No.	Input Voltage	Output Voltage	Control Scheme	Switching Frequency (kHz)	Typical Output Current (mA)	Typical Current Consumption (μA)	Typical Efficiency	Package
HT7727*	0.8V~6.0V	2.7V	PFM	105	100	8	80%	TO92, SOT89, SOT25
HT7730*	0.8V~6.0V	3.0V	PFM	105	100	8	80%	TO92, SOT89, SOT25
HT7733*	0.8V~6.0V	3.3V	PFM	105	100	8	80%	TO92, SOT89, SOT25
HT7750*	0.8V~6.0V	5.0V	PFM	105	100	8	80%	TO92, SOT89, SOT25

* Under development, available in 1Q, 2004.

Charge Pump DC/DC Converter Series

Part No.	VDD	Conversion Voltage	Typical Output Current (mA)	Typical Standby Current (μA)	Output Impedance	Package
HT7660	3V~12V	VDD ~ –VDD	20	80	60Ω	8DIP/SOP

Voice/Music

Voice MCU Series

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	Timer		D/A	Stack	Package
							16-bit	RTC			
HT86072	2.4V~5.2V	8K×16	208×8	192K×8	72sec	23	3	√	12-bit×1ch	8	28SOP, 100QFP
HT86144	2.4V~5.2V	8K×16	208×8	384K×8	144sec	23	3	√	12-bit×1ch	8	28SOP, 100QFP
HT86192	2.4V~5.2V	8K×16	208×8	512K×8	192sec	23	3	√	12-bit×1ch	8	28SOP, 100QFP
HT86384	2.4V~5.2V	8K×16	208×8	1024K×8	384sec	23	3	√	12-bit×1ch	8	28SOP, 100QFP
HT86576	2.4V~5.2V	8K×16	208×8	1536K×8	576sec	23	3	√	12-bit×1ch	8	32SOP, 100QFP
HT86768	2.4V~5.2V	8K×16	208×8	2048K×8	768sec	23	3	√	12-bit×1ch	8	32SOP, 100QFP

Note: 1. All listed devices are mask version MCUs.
2. Evaluation kits are available for product development and verification purposes, please contact us for further information.

Music MCU Series

Part No.	VDD	Program Memory	Data Memory	I/O	Timer	Polyphony	D/A	Package
HT36A4	2.4V~5.0V	32K×16	208×8	8	8-bit×2	8	16-bit×1	16DIP, 20SOP
HT36A3	2.4V~5.0V	32K×16	208×8	20	8-bit×2	8	16-bit×1	28SOP, 48SSOP
HT36A2	2.4V~5.0V	64K×16	208×8	20	8-bit×2	8	16-bit×1	28SOP, 48SSOP
HT36A1*	2.4V~5.0V	64K×16	208×8	24	8-bit×2	8	16-bit×2	48SSOP
HT36A0	3.6V~5.0V	64K×16	208×8	28	16-bit×2	16	16-bit×2	48SSOP
HT36B2	3.6V~5.0V	128K×16	512×8	32	16-bit×2	16	16-bit×2	28SOP, 56SSOP
HT36B0	3.6V~5.0V	256K×16	768×8	36	16-bit×2	16	16-bit×2	28SOP, 64QFP

* Under development, available in 1Q, 2004.
Note: The waveform data and program code share the same memory space.

Q-Voice™ Series

Part No.	VDD	Program Memory	Data Memory	Voice ROM	Voice Capacity	I/O	D/A	Package
HT83003	2.4V~5.0V	2K×14	80×8	8K×8	3sec	8	PWM	32DIP
HT83006	2.4V~5.0V	2K×14	80×8	16K×8	6sec	8	PWM	32DIP
HT83009	2.4V~5.0V	2K×14	80×8	24K×8	9sec	8	PWM	32DIP
HT83018	2.4V~5.0V	2K×14	80×8	48K×8	18sec	8	PWM	32DIP
HT83036	2.4V~5.0V	2K×14	80×8	96K×8	36sec	8	PWM	32DIP
HT83048	2.4V~5.0V	2K×14	80×8	128K×8	48sec	8	PWM	32DIP
HT83072	2.4V~5.0V	2K×14	80×8	192K×8	72sec	8	PWM	32DIP

Note: 1. All listed devices are mask version devices.
2. Evaluation kits are available for product development and verification purposes, please contact us for further information.
3. The PWM output is capable of directly driving an 8Ω speaker.
4. Q-Voice™ is a trademark of Holtek Semiconductor Inc.

EasyVoice™ Series

Part No.	VDD	Voice Capacity	Key (Max.)	Output (Max.)	D/A	Package
HT81R03 HT81003	2.4V~3.6V 2.4V~5.0V	3sec	2	2	PWM	16DIP
HT81006	2.4V~5.0V	6sec	8	2	PWM	16DIP
HT81R09* HT81009	2.4V~5.0V	9sec	8	2	PWM	16DIP
HT81012	2.4V~5.0V	12sec	8	2	PWM	16DIP
HT81R18* HT81018	2.4V~5.0V	18sec	8	2	PWM	16DIP
HT81R36	2.4V~5.0V	36sec	8	2	PWM	16DIP

* Under development, available in 1Q, 2004.
Note: 1. Part Numbers including "R" are OTP devices while others are mask version devices.
2. For HT81006 and HT81012, the higher voice capacity OTP devices are available for product development and verification purposes.
3. The PWM output is capable of directly driving an 8Ω speaker & piezoelectric buzzer.
4. EasyVoice™ is a trademark of Holtek Semiconductor Inc.

Sound Effects Series

Part No.	Description	VDD	Command Input	Built-in VCO	Delay Time (ms)	Package
HT8950	Voice Changer	2.4V~4.0V	Manual	√	—	16/18DIP
HT8970	Voice Echo	4.5V~5.5V	Manual	√	30~330	16DIP/SOP

Voice/Music

Piano Series

Part No.	VDD	Keys	Timbre	Rhythm	Demo Songs	LED Flash	Package
HT337A	2.4V~5.0V	37	16	16	22	√	48SSOP
HT337B	2.4V~5.0V	37	8	8	8	—	48SSOP
HT3496	2.4V~5.0V	49	10	10	8	—	48SSOP
HT3497	2.4V~5.0V	49/54	100	100	10	—	48SSOP
HT3612	3.6V~5.0V	61	20	20	8	—	48SSOP
HT3614	2.4V~5.0V	61	20	20	5	—	48SSOP

Computer

Keyboard/Mouse/Joystick MCU Series

Part No.	VDD	Clock Mode	Program Memory	Data Memory	Interface	I/O	Timer 8-bit	Timer 16-bit	A/D	PWM	Stack	Package
HT82K68E HT82K68A	2.2V~5.5V	RC/Crystal	3K×16	160×8	PS/2	37	1	—	—	—	6	20/28SOP, 48SSOP
HT82K96E HT82K96A	4.4V~5.5V	Crystal	4K×15	160×8	USB+PS/2	32	1	1	8-bit×6ch	—	8	20SOP, 48SSOP
HT82J97E HT82J97A*	4.0V~5.5V	Crystal	2K×14	96×8	USB+PS/2	20	—	1	8-bit×6ch	8-bit×2	4	20/28SOP
HT82M99E HT82M99A*	4.0V~5.5V	Crystal	2K×14	96×8	USB+PS/2	12	—	1	—	—	4	18/20DIP, 20SOP

* Under development, available in 1Q, 2004.

Note: Part numbers suffixed with "A" are mask version devices while "E" are OTP devices.

Mouse Series

Part No.	Description	VDD	System Frequency	X/Y axis	Z axis	Package
HT6523	PS/2 mouse controller	4.75V~5.25V	6MHz	Photo Ball 400 DPI	Optomech/Mechanical	16DIP
HT82M39A	3-key 3D PS/2 mouse controller	4.75V~5.25V	2MHz	Photo Ball 800 DPI Opto 400 DPI	Optomech/Mechanical	16DIP
HT82M398A	5-key 3D WIN2000 PS/2 mouse controller	4.75V~5.25V	2MHz	Photo Ball 800 DPI Opto 400 DPI	Optomech/Mechanical	16DIP
HT82M30A	3/5-key 3D PS/2 optical mouse controller (for HP H2051/H2620/H2610)	4.75V~5.25V	2MHz	HP Sensor Opto 400/800 DPI	Optomech/Mechanical (Z axis/4/2/1)	16/18DIP
HT82M98A	3-key 3D USB+PS/2 mouse controller	4.4V~5.25V	6MHz	Photo Ball 800 DPI Opto 400 DPI	Optomech/Mechanical	18DIP
HT82M980A	5-key 3D WIN2000 USB+PS/2 mouse controller	4.4V~5.25V	6MHz	Photo Ball 800 DPI Opto 400 DPI	Optomech/Mechanical	20DIP
HT82M21A	3-key 3D USB+PS/2 optical mouse controller (for HP H2051/H2620/H2610)	4.4V~5.25V	6MHz	HP Sensor Opto 400/800 DPI	Optomech/Mechanical (Z axis/4/2/1)	18DIP
HT82M22A	5-key 3D USB+PS/2 optical mouse controller (for HP H2051/H2620/H2610)	4.4V~5.25V	6MHz	HP Sensor Opto 400/800 DPI	Optomech/Mechanical (Z axis/4/2/1)	20DIP

Keyboard Series

Part No.	Description	VDD	Oscillator	Interface	Package
HT82K28A	WIN98 KB	4.75V~5.25V	RC	PS/2	40DIP
HT82K628A	WIN2000 KB	4.75V~5.25V	RC	PS/2	40DIP
HT82K629A	WIN2000 KB	4.75V~5.25V	Crystal	USB+PS/2	40DIP

Multimedia Series

Part No.	A/D	MSPS	VDD	Power Censupt	Package
HT82V14	14 bit	6	5V	350mW	28SOP
HT82V26	16 bit	30	5V	400mW	28SSOP
HT82V36	16 bit	6	3.3V	56mW	28SSOP

16-Bit Audio DSP Series

Part No.	Core VDD	I/O VDD	System Clock	Program Memory	Coefficient Memory	Data Memory	Timer 16-bit	A/D	I²S	MCU I/F Serial	MCU I/F Parallel	CD DSP I/F	Package
HT82A88F HT82A880*	2.5V	3.3V 2.5V	16.9344 MHz	8K×24	16K×16	14K×16	1	12-bit×1ch	√	√	√	√	64LQFP

* Under development, available in 1Q, 2004.

Note: Part number suffixed with "F" is a flash version device, the other is a mask version device.

Communication

Phone Controller MCU Series

Part No.	VDD	Program Memory	Data Memory	General I/O	Dialer I/O	LCD	Timer	External Interrupt	Stack	DTMF Generator	FSK Receiver	Package
HT95A100 HT95A10P	2.4V~5.5V	4K×16	384×8	20	6	—	16-bit×2	3	4	√	—	28SOP
HT95A200 HT95A20P	2.4V~5.5V	4K×16	1152×8	28	8	—	16-bit×2	4	8	√	—	48SSOP
HT95A300 HT95A30P	2.4V~5.5V	8K×16	2112×8	28	8	—	16-bit×2	4	8	√	—	48SSOP
HT95A400* HT95A40P*	2.4V~5.5V	16K×16	2880×8	44	8	—	16-bit×2	4	12	√	—	64QFP
HT95L000 HT95L00P	2.4V~5.5V	4K×16	384×8	14~18	6	12×8~16×8	16-bit×2	3	4	√	—	56SSOP
HT95L100 HT95L10P	2.4V~5.5V	4K×16	1152×8	16~20	8	16×8~20×8	16-bit×2	4	8	√	—	64QFP
HT95L200 HT95L20P	2.4V~5.5V	8K×16	1152×8	20~28	8	24×8~24×16	16-bit×2	4	8	√	—	100QFP
HT95L300 HT95L30P	2.4V~5.5V	8K×16	2112×8	16~28	8	36×16~48×16	16-bit×2	4	8	√	—	100QFP
HT95L400* HT95L40P*	2.4V~5.5V	16K×16	2880×8	28~40	8	36×16~48×16	16-bit×2	4	12	√	—	128QFP
HT95C200 HT95C20P	2.4V~5.5V	8K×16	1152×8	20~28	8	24×8~24×16	16-bit×2	4	8	√	√	128QFP
HT95C300 HT95C30P	2.4V~5.5V	8K×16	2112×8	16~28	8	36×16~48×16	16-bit×2	4	8	√	√	128QFP
HT95C400* HT95C40P*	2.4V~5.5V	16K×16	2880×8	28~40	8	36×16~48×16	16-bit×2	4	12	√	√	128QFP

* Under development, available in 1Q, 2004.

Note: 1. Part numbers including "A" are I/O type devices, "L" are LCD type devices, while "C" are LCD with CID type devices.
2. Part numbers suffixed with "P" are OTP devices, all others are mask version devices.

Dual Mode Caller ID Phone Single Chip

Part No.	VDD	Incoming Call Store	Outgoing Call Store	FSK/DTMF Receiver	Ringer	LCD Driver	Tone/Pulse Dialer	Package
HT95168	2.4V~5.5V	27 sets (Max.)	8 set (Max.)	√	√	√	√	56SSOP

Telecom Peripheral Series

Part No.	Description	VDD	OSC Frequency	Package
HT9200A HT9200B	DTMF generator	2.5V~5.5V	3.58MHz	8DIP/SOP 14SOP
HT9170B HT9170D	DTMF receiver	2.5V~5.5V	3.58MHz	18DIP 18SOP
HT9020B	Call progress tone detector	2.5V~5.5V	32768Hz	8DIP
HT9032C HT9032D	FSK decoder	3.5V~5.5V	3.58MHz	16DIP/SOP 8DIP/SOP
HT9033*	CAS tone decoder	3.5V~5.5V	3.58MHz	16DIP/SOP
HT9015	RF single chip for CT0	2.7V~6.0V	10.24MHz	48SSOP

* Under development, available in 1Q, 2004.

Communication

Basic Dialer Series

Part No.	VDD	Mem. No.	Hand Free	Hold Line	LCD Interface	Key-tone	On-hook Store	Flash Mode	Package	Remark
HT93214A	2.0V~5.5V	1	—	—	—	—	—	C	16DIP	Minimum flash time=300ms
HT93214B	2.0V~5.5V	1	√	—	—	—	—	C	18DIP	Minimum flash time=300ms
HT93214AT	2.0V~5.5V	1	—	—	—	√	—	C	18DIP	Minimum flash time=300ms
HT9302G	2.0V~5.5V	1	—	—	—	—	—	D/C	16DIP	—
HT9302A	2.0V~5.5V	2	—	—	—	—	—	D/C	18DIP	—
HT9302B	2.0V~5.5V	2	√	√	—	—	—	D/C	22SKDIP	—
HT9302C	2.0V~5.5V	2	—	—	√	—	—	D/C	20DIP	—
HT9302D	2.0V~5.5V	2	√	√	√	—	—	D/C	24SKDIP	—
HT9315A	2.0V~5.5V	15	—	—	—	—	—	D/C	18DIP	—
HT9315B	2.0V~5.5V	15	√	√	—	—	—	D/C	22SKDIP	—
HT9315C	2.0V~5.5V	15	—	—	√	—	—	D/C	20DIP	—
HT9315D	2.0V~5.5V	15	√	√	√	—	—	D/C	24SKDIP	—
HT9320A	2.0V~5.5V	22	√	√	—	—	√	D/C	28DIP	—
HT9320B	2.0V~5.5V	22	√	√	√	—	—	D/C	28DIP	—
HT9320C	2.0V~5.5V	22	—	—	—	—	—	D/C	22SKDIP	—
HT9320H	2.0V~5.5V	22	√	√	—	—	√	D	28DIP	—
HT9320K	2.0V~5.5V	22	√	√	—	√	—	D/C	28DIP	—

IDD Lock Dialer Series

Part No.	VDD	Mem. No.	Hand Free	Hold Line	LCD Interface	Flash Mode	Package
HT9315AL	2.0V~5.5V	15	—	—	—	D/C	18DIP
HT9315BL	2.0V~5.5V	15	√	√	—	D/C	22SKDIP
HT9315CL	2.0V~5.5V	15	—	—	√	D/C	20DIP
HT9315DL	2.0V~5.5V	15	√	√	√	D/C	24SKDIP
HT9320L	2.0V~5.5V	22	√	√	√	D/C	28DIP
HT9320L-X	2.0V~5.5V	22	√	√	√	D/C	28DIP

Analog

D/A Converter Series

Part No.	Description	VDD	Package
HT82V731	16-bit stereo audio D/A converter	2.4V~5.5V	8SOP
HT82V737	16-bit stereo audio D/A converter with earphone driver	2.4V~5.5V	16NSOP
HT82V738*	24-bit stereo audio D/A converter	3V~5V	16NSOP

* Under development, available in 1Q, 2004.

Amplifier Series

Part No.	Description	VDD	Operating Current	Shutdown Function	Package
HT9274	Quad micropower op amp	1.6V~5.5V	5μA	—	14DIP/SOP
HT82V732	80mW stereo audio power amp	3V~5.5V	3mA	—	8SOP
HT82V733	400mW mono audio power amp	2.4V~5.5V	4mA	√	8SOP
HT82V735*	330mW stereo audio power amp with shutdown	2.4V~6V	4mA	√	8SOP

* Under development, available in 1Q, 2004.

Miscellaneous

Timepiece Series

Part No.	VDD	Operating Current (μA)	Main Function	Standby Current (μA)	External X'tal Osc.	Package
HT1380 HT1381	2.0V~5.5V	1.2	Time Keeper	0.1	32.768kHz	8DIP 8SOP

Clinical Thermometer Series

Part No.	VDD	Measurement Range	Resolution	Detect Stable Time	Auto Power Off
HT7500	1.3V~1.65V	32°C~42°C	0.1°C	16sec	8'40"
HT7501	1.3V~1.65V	32°C~43°C	0.01°C	8sec	8'40"

Camera Peripheral Series

Part No.	Description	VDD	Operating Current	Standby Current	Package
HT6750A	3-Key Date Printer	2.4V~5.5V	<3μA at 3V	—	—
HT6751A HT6751B	Motor Driver	2.0V~6.0V	—	<2μA at 5V	8SOP

PIR Controller Series

Part No.	VDD	ZC Off/On for Override	Flash on Mode Auto-change	Override On Duration	Comparator Window	Effective Trigger Width	Package
HT7610A HT7610B	5V~12V	2 times	Flash	8 hrs	$\frac{1}{16}(V_{DD}-V_{EE})$	>24ms	16DIP
HT7611A HT7611B	5V~12V	1 time	No flash	8 hrs	$\frac{1}{16}(V_{DD}-V_{EE})$	>24ms	16DIP

Note: Part numbers suffixed with A are for Relay application while those suffixed with B are for Triac application.

Alphanumeric Recognition Series

Part No.	VDD	Interface	Alphabet	Number	Hiragana	Katakana	Symbol
HT6760*	2.4V~5.2V	R type	A-Z/a-z	0~9	√	√	7
HT6762*	2.4V~5.2V	C type	A-Z/a-z	0~9	√	√	7

* Under development, available in 1Q, 2004.

MCU Programming Tools

The following gives details behind the range of programming equipment available to program the full range of Holtek Microcontroller based devices.

HT-IDE3000 Development Environment

The HT-IDE3000 is a fully integrated development system designed around the Holtek range of microcontrollers. Working in conjunction with the HT-ICE hardware emulator, the HT-IDE3000 system provides a user friendly workbench to ease the process of application program development, by integrating all of the software tools, such as editor, cross assembler, linker, library and symbolic debuggers. More detailed information on the HT-IDE3000 development system is contained within the HT-IDE3000 User's Guide. Installed in conjunction with the HT-IDE3000 and to ensure that the development system contains information on new microcontrollers and software updates, Holtek provides regular HT-IDE3000 Service Packs. These Service Packs do not replace the HT-IDE3000 but are installed after the HT-IDE3000 system software has been installed.

HT-ICE — Holtek In-Circuit Emulator

Developed alongside the Holtek 8-bit microcontroller device range, the Holtek ICE is a fully functional in-circuit emulator for Holtek's 8-bit microcontroller devices. Incorporated within the system are a comprehensive set of hardware and software tools for rapid and easy development of user applications. Central to the system is the in-circuit hardware emulator, capable of emulating all of Holtek's 8-bit devices in real-time, while also providing a range of powerful debugging and trace facilities. Regarding software functions, the system incorporates a user-friendly windows based workbench which integrates together functions such as program editor, cross assembler, linker and library manager. In addition, the system is capable of running in software simulation mode without connection to the HT-ICE hardware.

HT-ICE — Holtek In-Circuit Emulator

Product Code	IC Type	IC Part No.	Product Contents
CICE48C00CCF	Cost-Effective I/O Type	HT48R05A-1, HT48C05, HT48R06A-1, HT48C06	HT-ICE, CD, 4 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB48MIO-A-1)
	I/O Type	HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R70A-1, HT48C70-1	
	Remote Type	HT48RA0A, HT48CA0, HT48RA3, HT48CA3, HT48CA6	
CICE49C00CCAA	LCD Type	HT49R30A-1, HT49C30-1, HT49C30L, HT49R50A-1, HT49C50-1, HT49C50L, HT49R70A-1, HT49C70-1, HT49C70L	HT-ICE, CD, 2 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB49C00-A-1)
CICE46C0CCEA	A/D Type	HT46R22, HT46C22, HT46R23, HT46C23, HT46R24, HT46C24, HT46R47, HT46C47	HT-ICE, CD, 5 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB46SER0000A)
	A/D with LCD Type	HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65	
TICE47C-CCDA	R-F Type	HT47R20A-1, HT47C20-1, HT47C20L	HT-ICE, CD, Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB47C00-A-1), 2 Test Keys (RFADOSC-1, RFADOSC-2)
TICE47C100000A		HT47C10L	HT-ICE, CD, Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB47C100000A), Test Key (HTK025)
TICE95-CCFX	Phone Controller Type	HT95A100, HT95A10P, HT95A200, HT95A20P, HT95A300, HT95A30P, HT95A400, HT95A40P, HT95L000, HT95L00P, HT95L100, HT95L10P, HT95L200, HT95L20P, HT95L300, HT95L30P, HT95L400, HT95L40P, HT95C200, HT95C20P, HT95C300, HT95C30P, HT95C400, HT95C40P	HT-ICE, CD, 2 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB95SER0000A)
TICEG2190-CCAA	Dot Matrix LCD Type	HTG2130, HTG2130R, HTG2150, HTG2150R, HTG2160, HTG2160R, HTG2190, HTG2190R	HT-ICE, CD, 2 Flat Cables, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCBG2190-A)
TICE86SER0000A	Voice	HT86072, HT86144, HT86192, HT86384, HT86576, HT86768	HT-ICE, CD, Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB86SER0000A)
	Q-Voice™	HT83003, HT83006, HT83009, HT83018, HT83036, HT83048, HT83072	
TICE82K680000A	Keyboard/Mouse Type	HT82K68E, HT82K68A	HT-ICE, CD, Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB82K680000A)
TICE82K960000A	Keyboard/Mouse Type	HT82K96E, HT82K96A	HT-ICE, CD, Flat Cable, Power Adapter, Power Cord, Printer Cable, Interface Card (TPCB82K960000A)

HT-ICE Interface Card

The interface cards supplied with the HT-ICE can be used for most applications, however, it is possible for the user to omit the supplied interface card and design their own interface card. By including the necessary interface circuitry on their own interface card, the user has a means of directly connecting their target boards to the CN1 and CN2 connectors of the HT-ICE.

The following list gives the information to enable the correct flat cable connection between the range of microcontroller packages and the appropriate interface card and socket. Please note that the Interface Card accompanying each HT-ICE model is packed with other accessories in the same HT-ICE carton. Users need not purchase extra Interface Cards.

HT-ICE Interface Card		
Product Code	**Supported IC**	**HT-ICE Type No.**
TPCB48MIO-A-1	HT48R05A-1, HT48C05, HT48R06A-1, HT48C06, HT48R10A-1, HT48C10-1, HT48R30A-1, HT48C30-1, HT48R50A-1, HT48C50-1, HT48R70A-1, HT48C70-1, HT48RA0A, HT48CA0, HT48RA3, HT48CA3, HT48CA6	CICE48C00CCF
TPCB49C00-A-1	HT49R30A-1, HT49C30-1, HT49C30L, HT49R50A-1, HT49C50-1, HT49C50L, HT49R70A-1, HT49C70-1, HT49C70L	CICE49C00CCAA
TPCB46SER0000A	HT46R22, HT46C22, HT46R23, HT46C23, HT46R24, HT46C24, HT46R47, HT46C47, HT46R62, HT46C62, HT46R63, HT46C63, HT46R64, HT46C64, HT46R65, HT46C65	CICE46C0CCEA
TPCB47C00-A-1	HT47R20A-1, HT47C20-1, HT47C20L	TICE47C-CCDA
TPCB47C100000A	HT47C10L	TICE47C100000A
TPCB95SER0000A	HT95A100, HT95A10P, HT95A200, HT95A20P, HT95A300, HT95A30P, HT95A400, HT95A40P, HT95L000, HT95L00P, HT95L100, HT95L10P, HT95L200, HT95L20P, HT95L300, HT95L30P, HT95L400, HT95L40P, HT95C200, HT95C20P, HT95C300, HT95C30P, HT95C400, HT95C40P	TICE95-CCFX
TPCBG2190-A	HTG2130, HTG2130R, HTG2150, HTG2150R, HTG2160, HTG2160R, HTG2190, HTG2190R	TICEG2190-CCAA
TPCB86SER0000A	HT86072, HT86144, HT86192, HT86384, HT86576, HT86768, HT83003, HT83006, HT83009, HT83018, HT83036, HT83048, HT83072	TICE86SER0000A
TPCB82K680000A	HT82K68E, HT82K68A	TICE82K680000A
TPCB82K960000A	HT82K96E, HT82K96A	TICE82K960000A

OTP Programmer

The Holtek OTP programmers are supplied to enable efficient programming of OTP devices for engineering or low to medium volume production. The HandyWriter is able to run either by connecting to the PC through its printer port or to the HT-ICE directly without the printer port connection, however it is not able to run in stand alone mode. In the other hand, the new HT-Writer is able to run either by connecting to the PC through its RS-232 serial port or to operate stand alone without connecting to PC. Please note if the device to be programmed does not fit the on board Textool, an extra Adapter Card is needed to accommodate the device package form. Related information is listed as follows.

OTP Programmer		
Product Code	**Product Code**	**Product Contents**
HT-Writer	COTPWRITER00A	HT-Writer (with 40pin DIP textool), CD, Power Adapter, RS-232 Cable
HandyWriter	THANDYOTP-F	HandyWriter (with 40pin DIP textool), CD, Power Adapter, Printer Cable

OTP Adapter Card

The Holtek OTP programmers are supplied with a standard Textool chip socket. The OTP Adapter Card is used to connect the Holtek OTP programmers to the various sizes of available OTP chip packages that are unable to use this supplied socket. The following table will enable the user to select the required adapter card for their various applications.

OTP Adapter Card		
Product Code	**IC Part No.**	**Product Contents**
TSOP2DIP28	All except HT48RA0A	OTP adapter for OTP chips with SOP package, 28pin and below
TNSSOP2DIP28	HT48R05A-1, HT48R06A-1	OTP adapter for SSOP package, 28pin and below
TADP48R50ASO48	HT48R50A-1, HT48R70A-1, HT46R24, HT82K68E	OTP adapter for HT48R50A-1, HT48R70A-1, HT46R24, HT82K68E 48SSOP package
TADP48R70AQF64	HT48R70A-1	OTP adapter for HT48R70A-1 64QFP package
T49R50QFP100-B	HT49R50A-1, HT49R70A-1	OTP adapter with a 100QFP textool
TADP4649RSS56A	HT49R30A-1, HT49R50A-1, HT46R62, HT46R64, HT46R65,	OTP adapter for HT49R30A-1, HT49R50A-1 48SSOP package and HT46R62, HT46R64, HT46R65 56SSOP package
TADP46R63SS56A	HT46R63	OTP adapter for HT46R63 56SSOP package
TADP46R63QF100	HT46R63	OTP adapter for HT46R63 100QFP package
TADP4649SQF10A	HT46R64, HT46R65	OTP adapter for HT46R64, HT46R65 100QFP package
T47R20QFP64	HT47R20A-1	OTP adapter for HT47R20A-1 64QFP package
T48RA0DIPSOP-A	HT48RA0A	OTP adapter with a DIP textool and a SOP textool
TADP95A10SO28A	HT95A10P	OTP adapter for HT95A10P 28SOP package
TADP95AX0PSS48	HT95A20P, HT95A30P	OTP adapter for HT95A20P, HT95A30P 48SSOP package
TADP95L10PQF64	HT95A40P, HT95L10P	OTP adapter for HT95A40P, HT95L10P 64QFP package
TADP95L00PSS56	HT95L00P	OTP adapter for HT95L00P 56SSOP package
TADP95LX0PQF100	HT95L20P, HT95L30P	OTP adapter for HT95L20P, HT95L30P 100QFP package
TADP95CX0PQF128	HT95L40P, HT95C20P, HT95C30P, HT95C40P	OTP adapter for HT95L40P, HT95C20P, HT95C30P, HT95C40P 128QFP package
TADP82K96SOP20	HT82K96E	OTP adapter for HT82K96E 20SOP package
TADP82K96SS48	HT82K96E	OTP adapter for HT82K96E 48SSOP package

MCU Tools Indexing Table

By referring to the applicable Holtek MCU part number this table provides users with a means to quickly locate the relevant development tools and OTP programming tools required. In instances where tools are not listed for specific devices, this infers that such tools are not required.

Note that in the following indexing tables, any HT-ICE with part number CICE46C0CCEA, CICE48C00CCF and CICE49C00CCAA, denote the new versions of the HT-ICE. Their corresponding old version part numbers are respectively, TICE46SER0000B, TICE48SER0000A and TICE49C-CCAA. The OTP writer, with the part number COTPWRITER00A, is known as the HT-Writer and is the new version of the OTP writer. The old version, known as the HandyWriter, has the part number, THANDYOTP-F. Since the new version of the HT-ICE has an integrated OTP writer on board, it is not required to obtain an extra OTP writer. As the older version of the HT-ICE does not have an integrated OTP writer, it requires a separate OTP writer for programming.

MCU Tools Indexing Table

IC Part No.	Package Type	HT-ICE	I/O Interface Card	OTP Writer (& Adapter)	Hi-Lo Writer (& Adapter)
Cost-Effective I/O Type MCU Series					
HT48R05A-1 HT48C05	16SSOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TNSSOP2DIP28)	TOTP201H2DIP40 (TNSSOP2DIP28) TOTP204DIP (TNSSOP2DIP28)
	18DIP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	18SOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP
HT48R06A-1 HT48C06	16SSOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TNSSOP2DIP28)	TOTP201H2DIP40 (TNSSOP2DIP28) TOTP204DIP (TNSSOP2DIP28)
	18DIP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	18SOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP
I/O Type MCU Series					
HT48R10A-1 HT48C10-1	24SKDIP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	24SOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP
HT48R30A-1 HT48C30-1	24/28SKDIP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	24/28SOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP
HT48R50A-1 HT48C50-1	28SKDIP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	28SOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP
	48SSOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TADP48R50ASO48)	TOTP201H2SSP48 TOTP204H2SSP48
HT48R70A-1 HT48C70-1	48SSOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TADP48R50ASO48)	TOTP201H2SSP48 TOTP204H2SSP48
	64QFP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TADP48R70AQF64)	TPRO201H58AQF64 TPRO204H58AQF64
LCD Type MCU Series					
HT49R30A-1 HT49C30-1 HT49C30L	48SSOP	CICE49C00CCAA	TPCB49C00-A-1	COTPWRITER00A (TADP4649RSS56A)	TOTP201H2SSP48 TOTP204H2SSP48
HT49R50A-1 HT49C50-1 HT49C50L	48SSOP	CICE49C00CCAA	TPCB49C00-A-1	COTPWRITER00A (TADP4649RSS56A)	TOTP201H2SSP48 TOTP204H2SSP48
	100QFP	CICE49C00CCAA	TPCB49C00-A-1	COTPWRITER00A (T49R50QFP100-B)	TOTP201H2QP100 TOTP204H2QP100
HT49R70A-1 HT49C70-1 HT49C70L	100QFP	CICE49C00CCAA	TPCB49C00-A-1	COTPWRITER00A (T49R50QFP100-B)	TOTP201H2QP100 TOTP204H2QP100 TPRO201H58CQF10 TPRO204H58CQF10

MCU Tools Indexing Table

IC Part No.	Package Type	HT-ICE	I/O Interface Card	OTP Writer (& Adapter)	Hi-Lo Writer (& Adapter)
A/D Type MCU Series					
HT46R22 HT46C22	24SKDIP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	24SOP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP
HT46R23 HT46C23	24/28SKDIP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	24/28SOP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP
HT46R24 HT46C24	28SKDIP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A	—
	28SOP			COTPWRITER00A (TSOP2DIP28)	
	48SSOP			COTPWRITER00A (TADP48R50ASO48)	
HT46R47 HT46C47	18DIP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	18SOP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP
A/D with LCD Type MCU Series					
HT46R62 HT46C62	56SSOP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TADP4649RSS56A)	TPRO201H58CSS56 TPRO204H58CSS56
HT46R63 HT46C63	56SSOP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TADP46R63SS56A)	TPRO201H58CSS56 TPRO204H58CSS56
	100QFP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TADP46R63QF100)	TOTP201H2QP100 TOTP204H2QP100 TPRO201H58AQF10 TPRO204H58AQF10
HT46R64 HT46C64	56SSOP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TADP4649RSS56A)	TPRO201H58CSS56 TPRO204H58CSS56
	100QFP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TADP4649SQF10A)	TPRO201H58CQF10 TPRO204H58CQF10
HT46R65 HT46C65	56SSOP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TADP4649RSS56A)	TPRO201H58CSS56 TPRO204H58CSS56
	100QFP	CICE46C0CCEA	TPCB46SER0000A	COTPWRITER00A (TADP4649SQF10A)	TPRO201H58CQF10 TPRO204H58CQF10
R-F Type MCU Series					
HT47R20A-1 HT47C20-1 HT47C20L	64QFP	TICE47C-CCDA	TPCB47C00-A-1	COTPWRITER00A (T47R20QFP64)	TPRO201H58AQF64 TPRO204H58AQF64
HT47C10L	44QFP	TICE47C100000A	TPCB47C100000A	—	—
Remote Type MCU Series					
HT48RA0A HT48CA0	20/24SOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (T48RA0DIPSOP-A)	TOTP201H2DIP40 (T48RA0DIPSOP-A) TOTP204DIP (T48RA0DIPSOP-A)
HT48RA3 HT48CA3	28SKDIP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A	TOTP201H2DIP40 TOTP204DIP
	28SOP	CICE48C00CCF	TPCB48MIO-A-1	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP TPRO201H58AS028 TPRO204H58AS028
HT48CA6	20/24SOP	CICE48C00CCF	TPCB48MIO-A-1	—	—

MCU Tools Indexing Table

IC Part No.	Package Type	HT-ICE	I/O Interface Card	OTP Writer (& Adapter)	Hi-Lo Writer (& Adapter)
Phone Controller MCU Series					
HT95A100 HT95A10P	28SOP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95A10SO28A)	TPRO201H58ASS56 TPRO204H58ASS56
HT95A200 HT95A20P	48SSOP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95AX0PSS48)	TPRO201H58ASS56 TPRO204H58ASS56
HT95A300 HT95A30P	48SSOP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95AX0PSS48)	TPRO201H58ASS56 TPRO204H58ASS56
HT95A400 HT95A40P	64QFP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95L10PQF64)	TPRO201H58AQF64 TPRO204H58AQF64
HT95L000 HT95L00P	56SSOP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95L00PSS56)	TPRO201H58ASS56 TPRO204H58ASS56
HT95L100 HT95L10P	64QFP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95L10PQF64)	TPRO201H58AQF64 TPRO204H58AQF64
HT95L200 HT95L20P	100QFP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95LX0PQF100)	TPRO201H58AQF10 TPRO204H58AQF10
HT95L300 HT95L30P	100QFP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95LX0PQF100)	TPRO201H58AQF10 TPRO204H58AQF10
HT95L400 HT95L40P	128QFP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95CX0PQF128)	TPRO201H58AQF12 TPRO204H58AQF12
HT95C200 HT95C20P	128QFP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95CX0PQF128)	TPRO201H58AQF12 TPRO204H58AQF12
HT95C300 HT95C30P	128QFP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95CX0PQF128)	TPRO201H58AQF12 TPRO204H58AQF12
HT95C400 HT95C40P	128QFP	TICE95-CCFX	TPCB95SER0000A	COTPWRITER00A (TADP95CX0PQF128)	TPRO201H58AQF12 TPRO204H58AQF12
Dot Matrix LCD MCU Series					
HTG2130 HTG2130R	100QFP	TICEG2190-CCAA	TPCBG2190-A	—	—
HTG2150 HTG2150R	100QFP	TICEG2190-CCAA	TPCBG2190-A	—	—
HTG2160 HTG2160R	100QFP	TICEG2190-CCAA	TPCBG2190-A	—	—
HTG2190 HTG2190R	128QFP	TICEG2190-CCAA	TPCBG2190-A	—	—
Keyboard/Mouse MCU Series					
HT82K68E HT82K68A	20/28SOP	TICE82K680000A	TPCB82K680000A	COTPWRITER00A (TSOP2DIP28)	TOTP201H2SOP28 TOTP204SOP TPRO201H58BSO28 TPRO204H58BSO28
	48SSOP	TICE82K680000A	TPCB82K680000A	COTPWRITER00A (TADP48R50ASO48)	TOTP201H2SSP48 TOTP204H2SSP48 TPRO201H58BSS48 TPRO204H58BSS48
HT82K96E HT82K96A	20SOP	TICE82K960000A	TPCB82K960000A	COTPWRITER00A (TADP82K96SOP20)	TPRO201H58BS028 TPRO204H58BS028
	48SSOP	TICE82K960000A	TPCB82K960000A	COTPWRITER00A (TADP82K96SS48)	TPRO201H58BSS48 TPRO204H58BSS48

MCU Tools Indexing Table

IC Part No.	Package Type	HT-ICE	I/O Interface Card	Demo Board
Voice MCU Series				
HT86072 HT86144 HT86192	28SOP 100QFP	TICE86SER0000A	TPCB86SER0000A	HT86P00EV-1 HT86P00EV-2 HT86P00-COB1 HT86P00-COB2
HT86384				HT86P00EV-1 HT86P00-COB1
HT86576 HT86768	32SOP 100QFP			HT86P00EV-3 HT86P00-COB3
Q-Voice™ Series				
HT83003 HT83006 HT83009 HT83018 HT83036 HT83048 HT83072	32DIP	TICE86SER0000A	TPCB86SER0000A	HT86P00EV-1 HT86P00EV-2 HT86P00-COB1 HT86P00-COB2

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